# INELASTIC PROTON SCATTERING FROM $^{12}C$, $^{16}O$, $^{6}Li$

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After previous exploratory runs, data on the inelastic scattering of 135 MeV protons from $^{12}C$, $^{16}O$, and $^{6}Li$ has been measured at laboratory angles from 8° to 85°. The oxygen target was 10 mg $cm^{-2}$ of mylar, but, since mylar also contains carbon, the carbon contribution was measured using a 10 mg $cm^{-2}$ polythene target and subtracted off. The $^{6}Li$ target was a 10 mg $cm^{-2}$ metallic foil.

The differential cross sections for spin-flip and spin-flip isopin-flip transitions were sought in all three nuclides, the relevant transitions being those exciting the 12.71 MeV ($1^+$) state in $^{12}C$, the 8.87 MeV ($2^-$), 17.79 MeV ($4^-$) and 19.80 MeV ($4^-$) states in $^{16}O$, and the 15.11 MeV ($1^+$) state in $^{12}C$, the 18.80 MeV ($4^-$) state in $^{16}O$, and the 3.56 MeV ($0^+$) state in $^{6}Li$. Data for most of the states below 20 MeV excitation in $^{12}C$ and $^{16}O$ were obtained, and also for most of the known states of $^{6}Li$.

The analysis of these data using a Distorted Wave program is still proceeding. Optical model parameters used are those derived from the analysis of elastic scattering data.

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